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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/880,985	06/13/2001	Peter T. Barrett	14531.104	5916

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EXAMINER

JONES III, CLYDE H

ART UNIT	PAPER NUMBER
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2611

DATE MAILED: 07/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/880,985	<b>Applicant(s)</b> BARRETT, PETER T.	
	<b>Examiner</b> Clyde H. Jones III	<b>Art Unit</b> 2611	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>6-2001</u> . | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Specification***

1. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the specification should be corrected to provide the proper antecedent basis for the phrase "language expressions" found in claims 14-16.

### ***Claim Objections***

2. Claim 9 is objected to because of the following informalities: The period at the end of the claim transition (after "following") is objected to. Each claim should end with a period. Periods may not be used elsewhere in the claim except for abbreviations – see MPEP 608.01(m). Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-21, 23-25 and 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bruette (6,708,336 B1) in view of Chidlovskii (6,347,314).

Art Unit: **2611**

Considering claim 1, Bruette teaches a system (fig. 1) including a television (monitor) and a video transmission medium, wherein interactive broadcast data is transmitted across the video transmission medium, wherein the television is configured to receive the interactive broadcast data (program identifying information), and wherein the interactive broadcast data includes text descriptions (service provider search data and information describing a channel), a method for efficiently searching interactive broadcast data to find a string of text, the method comprising:

receiving converted interactive broadcast data text descriptions (search data, fig. 2) (col. 5, lines 32-36);

receiving a user-entered text string (search criteria) from an input device (remote control, fig. 3) (col. 5, 64-67);

converting (according to Table 1, col. 5) the user-entered text string (col. 5, lines 53-55);

comparing the converted interactive broadcast data text descriptions (search data) to the converted user-entered text string (search criteria) (col. 6, lines 3-5); and

determining based on the comparison, if the user-entered text string is included in any of the interactive broadcast data text descriptions (col. 6, lines 6-8).

Bruette fails to disclose the use of binary signatures with a set of rules for converting and comparing the user-entered text string with the interactive broadcast data text descriptions.

Art Unit: **2611**

In an analogous art, Chidlovskii teaches a searching system (Chidlovskii, fig. 1) that converts text descriptions (regions, fig. 2A) and user-entered text (queries, fig. 2B) into binary signatures (col. 6, lines 5-7) and compares them in binary signature form (col. 6, lines 30-32), for the advantage of simple and efficient query evaluation and comparison that enables the avoidance of most tuple (text description record) duplications and decreases memory space requirements (col. 3, lines 24-29).

Therefore, it would be obvious to one of ordinary skill in the art, at the time the invention was made, to modify Bruette's system to convert text descriptions and user-entered text into binary signatures, and compare them as taught by Chidlovskii, for the advantages of reduced consumption of processor and memory resources.

Considering claim 2, Bruette in view of Chidlovskii further teaches the limitation: binary signatures being converted from interactive broadcast data text descriptions (regions - Chidlovskii - col. 5, lines 7-9) using a first set of specified rules (Chidlovskii - col. 5, lines 1-6).

Considering claims 3 and 4, Bruette in view of Chidlovskii further teaches the limitation converting the user-entered text string (query) into a binary signature using a second set of specified rules in which the first set of rules is equivalent/same to the second set of rules (Chidlovskii - col. 5, lines 3-7, fig. 2A and fig. 2B #3). The first set of rules reads on Chidlovskii's arithmetic operation in which a binary signature file is created, and the second set of rules reads on Chidlovskii's arithmetic operation also

Art Unit: **2611**

used to convert the input (user-entered text string) into a corresponding binary signature so that the system is enabled to compare against the binary signature file.

In regards to claims 5, 6, and 7, Bruette in view of Chidlovskii teach:

The limitation, "receiving binary signatures of the interactive broadcast data text descriptions, the binary signatures being converted from interactive broadcast data text descriptions using a first hash function", reads on Bruette receiving the interactive text descriptions (search data – Bruette, col. 3, lines 32-34) in which Chidlovskii's hash function (Chidlovskii, col. 5, lines 1-12 and col. 6, lines 25-31) is used to convert Bruette's received text descriptions into binary signatures.

The limitation, "converting the user-entered text string into a binary signature using a second hash function", reads on Bruette's user-entered text string in which Chidlovskii's hash function is used to convert the entered text string into a binary signature (Chidlovskii - col. 5, lines 1-12 and col. 6, lines 25-31).

The limitation, "wherein the first hash function and the second hash function are the same", reads on Chidlovskii's hash function (Chidlovskii - col. 6, lines 25-31) because, Chidlovskii's hash function is used to create a binary signature file and to convert the user input into a binary signature for comparison.

Considering claim 8, Bruette in view of Chidlovskii teach:

"Receiving binary signatures of electronic program guide text descriptions", reads on Bruette's receives EPG text descriptions (program guide – Bruette – col. 3,

Art Unit: **2611**

lines 29-33) in which Chidlovskii's hash function is used to convert received EPG text descriptions into a binary signature (Chidlovskii – col. 5, lines 1-10 & col. 6, lines 25-31).

In regards to claims 9 and 10, as discussed in claims 5 and 6, Bruette in view of Chidlovskii teaches the limitation receiving of interactive broadcast data text descriptions and the user-entered text strings. Chidlovskii uses a hash function to convert the received broadcast data text and the user-entered text strings into a binary signature file/binary signature accordingly for comparing purposes. Chidlovskii further discloses that the binary signature file is represented by a sequence of binary values, which are to be bitwise compared with multiple user-entered text signatures (Chidlovskii – col. 5, lines 1-6). The signatures must be a fixed length in order to do proper bitwise comparisons, thus Chidlovskii's signature is a fixed number of bytes.

In regards to claims 11, 12 and 13, Bruette in view of Chidlovskii teach:

“wherein the first fixed number of bytes and the second fixed number of bytes are the same”, “comparing bits included in the first fixed number of bytes to bits included in the second fixed number of bytes”, and “comparing the binary signatures of electronic program guide text descriptions to the binary signature of the user-entered text string” is further met by Bruette in view of Chidlovskii (Chidlovskii – col. 5, lines 4-6) for comparison purpose.

Art Unit: **2611**

In regards to claim 14, Bruette in view of Chidlovskii teaches receiving the interactive text descriptions (search data – Bruette, col. 3, lines 32-34) in which Chidlovskii's hash function (Chidlovskii, col. 5, lines 1-12 and col. 6, lines 25-31) is used to convert Bruette's received text descriptions into binary signatures. Bruette in view of Chidlovskii further teaches the limitation "receiving binary signatures of one or more language expressions", wherein Chidlovskii receives a language expression that is converted to region signature (Chidlovskii – fig. 2A).

In regards to claims 15, 16, and 17, Bruette in view of Chidlovskii teach:

the limitation, "receiving binary signatures of one or more language expressions, the binary signatures being converted from the one or more language expressions using a first digest function", reads on Bruette receiving the interactive text descriptions (search data – Bruette, col. 3, lines 32-34), in which Chidlovskii's hash/digest function (Chidlovskii, col. 5, lines 1-12 and col. 6, lines 25-31) is used to convert the language expressions to binary signatures;

the limitation, "converting a user-entered text string, which includes one or more language expressions, into a binary signature using a second digest function", reads on Bruette's user-entered text string in which Chidlovskii's hash/digest function is used to convert the entered text string (which is a language expression –Chidlovskii - fig. 2B) into a binary signature (Chidlovskii - col. 5, lines 1-12 and col. 6, lines 25-31);

the limitation, "wherein the first digest function and the second digest function are the same", reads on Chidlovskii's hash/digest function (Chidlovskii - col. 6, lines 25-



Art Unit: **2611**

31) because, Chidlovskii's hash/digest function is used to create a binary signature file and to convert the user input into a binary signature for comparison.

In regards to claim 18 and 19, Bruette in view of Chidlovskii teach:

the limitation "a set top box associated with a television receiving binary signatures of the interactive broadcast data text descriptions", reads on Bruette's IRD/STB 10 (Bruette - fig.1, col. 4, lines 50-52), which is associated with a television (Bruette - col. 4, lines 39-41), for receiving interactive broadcast data text descriptions (search data – Bruette, col. 3, lines 32-34) in which, Chidlovskii's hash function (Chidlovskii, col. 5, lines 1-12 and col. 6, lines 25-31) is used to convert Bruette's received text descriptions into binary signatures;

the limitation "a set top box associated with a television receiving a user-entered text string from an input device" reads on Bruette's IRD/STB (10, Bruette - fig. 1) which receives a user-entered text string from a remote control (fig. 3 - col. 5, 64-67).

Considering claims 20 and 21 Bruette in view of Chidlovskii teach:

the limitations, "storing the binary signatures of the interactive broadcast data text descriptions" and "storing the binary signatures of the interactive broadcast data text descriptions on one or more physical storage media" reads on Bruette's storing text descriptions in RAM (search data – Bruette – col. 5, lines 14-15 and col. 4, lines 65-67) which are converted into binary signatures by Chidlovskii's hash function (Chidlovskii – col. 5, lines 1-10 & col. 6, lines 25-31).

Art Unit: **2611**

Considering claims 23, 24, 25, Bruette in view of Chidlovskii teaches, the limitations “receiving additional text, which is associated with one or more interactive broadcast descriptions”, “receiving additional text, which is associated with one or more electronic program guide text descriptions”, and “receiving additional text, which is associated with one or more interactive broadcast data text descriptions, if the user-entered text string is included in any of the interactive broadcast data text descriptions”, which read on Bruette’s method in which additional information is received (search data used to compile a program guide - Bruette - col. 3, lines 28-33 & 41-49) and the user-entered text string is included in the interactive broadcast description (Bruette - col. 6, lines 1-8).

Considering claim 27, the limitation “determining based on the comparison, if the user-entered text string is included in any electronic program guide text descriptions”, reads on Bruette in view of Chidlovskii where Bruette’s method compares the user-entered text string (search criteria) to EPG text descriptions (service provider search data – Bruette - col. 3, lines 31-33) – Bruette – col. 6, lines 1-9.

In regards to claim 28, 29, 30 the limitations are analyzed with respect to previous claims 1, 8, 18, and 19 and:

the further limitation, “a computer-readable medium carrying computer-readable instructions, that when executed at the set top box, cause the set top box to perform the following”, although not clearly disclosed, is inherent for the STB/IRD 10 (Bruette, fig. 1)

Art Unit: **2611**

of Bruette in view of Chidlovskii to use a computer-readable medium (ROM 20 & RAM 22- Bruette – fig. 1) to store computer-readable instructions, that when executed at the set top box, cause the set top box CPU 18 to automatically execute the functions as disclosed by Bruette in view of Chidlovskii (Bruette – col. 4, lines 5-7 & lines 12-14).

the further limitation “wherein the computer-readable medium is one or more physical storage media”, reads on the system of Bruette in view of Chidlovskii because the system has a storage medium (ROM 20 & RAM 22- Bruette – fig. 1) to store instructions to perform the functions of the STB.

5. Claims 22 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bruette (6,708,336 B1) in view of Chidlovskii (6,347,314) as discussed above and further in view of Kessels, et al. (4,598,385).

Considering claims 22 and 26 Bruette in view of Chidlovskii teach:

Using bit-wise comparison of interactive broadcast data text description signatures to user-entered text signatures text description signatures to determine if a broadcast data text description signature is inclusive or equivalent (identical) to a user-entered query reads on Bruette’s method (Bruette - col. 6, lines 3-5) in which Chidlovskii’s system converts the text descriptions and user-entered text into binary signatures and bit-wise compares the text description signatures (regions) to the user-entered text signature (query) (Chidlovskii – fig. 2A & fig. 2B (#2 & #3) - col. 6, lines 58-67 & lines 30-32). The further limitation, “receiving additional text, which is associated with one or more interactive broadcast data text descriptions, if . . . the user-entered text

Art Unit: **2611**

string is identical to any of the binary signatures of the one or more interactive broadcast data text descriptions", reads on Bruette's method of receiving additional text (Bruette - col. 3, lines 28-33 & 41-49) and comparing the binary signatures of interactive broadcast data text descriptions to binary signatures of user-entered text converted by Chidlovskii's system.

Bruette in view of Chidlovskii fails to specifically disclose using logical OR.

In an analogous art, Kessels teaches a method (Kessels – fig. 4 - col. 6, lines 9-11) that uses logical OR to determine bit-wise correspondence (equivalence or inclusion) between a byte field in memory (reference – 140, 142) and a byte field received (data record - 114). Kessels' system compares (156, fig. 4) the bytes of reference information (142) (Kessels - col. 6, lines 43-47) to the results of a logical OR operation (152) [XOR function inherently does a logical OR] performed on each reference data byte field and the data record bytes (col. 6, lines 25-43).

It would have been obvious by one skilled in the art at the time of the invention, to modify the method of Bruette in view of Chidlovskii to further include the comparison method and use of the logical OR operation as taught by Kessels for the purpose of determining bit-wise correspondence between text description signatures and a user-entered text signature (Kessels – col. 6, lines 51-53) and because logical OR operations are readily available and routinely used to compare bit or binary operands.

Art Unit: **2611**

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Clyde H. Jones III whose telephone number is 571-272-5946. The examiner can normally be reached on 9-5:30 p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Grant can be reached on 571-272-7294. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CJ



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PRIMARY EXAMINER